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US EPA RECORDS CENTER REGION 5



518985

September 30, 1995

Ms. Sonia Vega
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604

7.2
9/30/95

Re: Refinery Products site
Schiller Park, Illinois
CERCLIS ID No.: ILD000665778
Focused Site Inspection Prioritization
Contract No.: 68-W0-0037
TDD No.: T05-9503-222

Dear Ms. Vega:

Enclosed are the final Focused Site Inspection Prioritization (FSIP) report and enclosures for the Refinery Products site, Schiller Park, Illinois. Draft copies of this report were submitted previously to you and to Mr. Tom Crause of the Illinois Environmental Protection Agency (IEPA).

The final FSIP is presented in two volumes. Volume 1 contains the Site Evaluation Report (SER). Volume 2 contains the United States Environmental Protection Agency Recommendation Form for the site as Enclosure 1, and a transmittal memorandum and complete Hazard Ranking System (HRS) scoring package as Enclosure 2.

Should you have any questions, please call me at 312/663-9415.

Sincerely,

Kelly Maley
Ecology and Environment, Inc.

xc: Steve Skare, Ecology and Environment, Inc.
Tom Crause, IEPA

**FOCUSED SITE INSPECTION PRIORITIZATION
SITE EVALUATION REPORT**

**REFINERY PRODUCTS
4256 WESLEY TERRACE
SCHILLER PARK, ILLINOIS**

CERCLIS ID No.: ILD000665778

Prepared for:

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
SITE ASSESSMENT SECTION
77 West Jackson Boulevard
Chicago, Illinois 60604**

**Date Prepared: September 15, 1995
U.S. EPA Region: 5
Contract No.: 68-W0-0037
Technical Direction Document No.: T05-9503-222
Prepared by: Ecology and Environment, Inc.
Kelly Maley
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1. INTRODUCTION

The Ecology and Environment, Inc. (E & E), Technical Assistance Team (TAT) was assigned by the United States Environmental Protection Agency (U.S. EPA), under Contract No. 68-W0-0037, Technical Direction Document (TDD) No. T05-9503-222, to evaluate the Refinery Products site in Schiller Park, Cook County, Illinois as a potential candidate for the National Priorities List (NPL). E & E performed Focused Site Inspection Prioritization (FSIP) activities to determine whether, or to what extent, the site poses a threat to human health and the environment, and has prepared this FSIP report. The report presents the results of E & E's evaluation and summarizes the site conditions and targets pertinent to the migration and exposure pathways associated with the site. Background information was obtained from U.S. EPA files, and a file search conducted at the IEPA Springfield office on April 19 and 20, 1995.

This report is organized into six sections, including this introduction. Section 2 describes the site and provides a brief site history. Section 3 provides information about previous investigations conducted at the site. Section 4 provides information about the four migration and exposure pathways (groundwater migration, surface water migration, soil exposure, and air migration). Section 5 is a summary of the FSIP. References used in the preparation of this report are listed in Section 6.

2. SITE DESCRIPTION AND HISTORY

The Refinery Products (RP) site is located at 4256 Wesley Terrace, in Schiller Park, Cook County, Illinois (SW1/4 sec. 15, T. 40 N., R. 12 E.) (E & E 1991; 1984). The coordinates of the site are latitude 57°30'00" North and longitude 87°52'00" West (E & E 1984). In the past, Refinery Products was owned by a subsidiary of QueVoe Chemical Industries, Inc. (QueVoe). The RP site is currently inactive and was vacated by its operator, Mr. John VanHoesen, on July 1, 1984 when QueVoe filed for bankruptcy. Prior to that date, the RP site was operated as a reprocessor of waste oils, chlorinated solvents, and mineral spirits. The RP site consisted of approximately 15 aboveground tanks within a containment wall, 7 additional tanks outside of the containment wall, and 15 tanks and 95 drums within the processing building (E & E 1991; IEPA 1984).

The RP site is located on approximately 1.5 acres of land in Schiller Park, Illinois (IEPA 1984). This area of Schiller Park is a well established area of heavy and light industrial, commercial, and single and multi-family residential land uses (IEPA 1980). The Chicago-O'Hare International Airport is located approximately one mile northwest of the site, and the area surrounding Schiller Park consists of the urban populated communities of Franklin Park, Park Ridge, Norridge, River Grove, Elmwood Park, Chicago, Northlake, Melrose Park, Bensenville, and Addison, Illinois (United States Geologic Survey [USGS] 1963; 1963a). The site location is shown on Figure 2-1.

The site is bordered by Cullom Avenue and a residential area to the north, Wesley Terrace and a residential area to the east, and the Soo Line Railroad Right-of-Way to the west and south (IEPA 1986; 1984; USGS 1963). The site is located within 30 yards of the residential areas (IEPA 1985). Site features are shown in Figure 2-2. Sample locations from the 1983 U.S. EPA PCB Compliance Report are shown on Figure 2-2. The Des Plaines

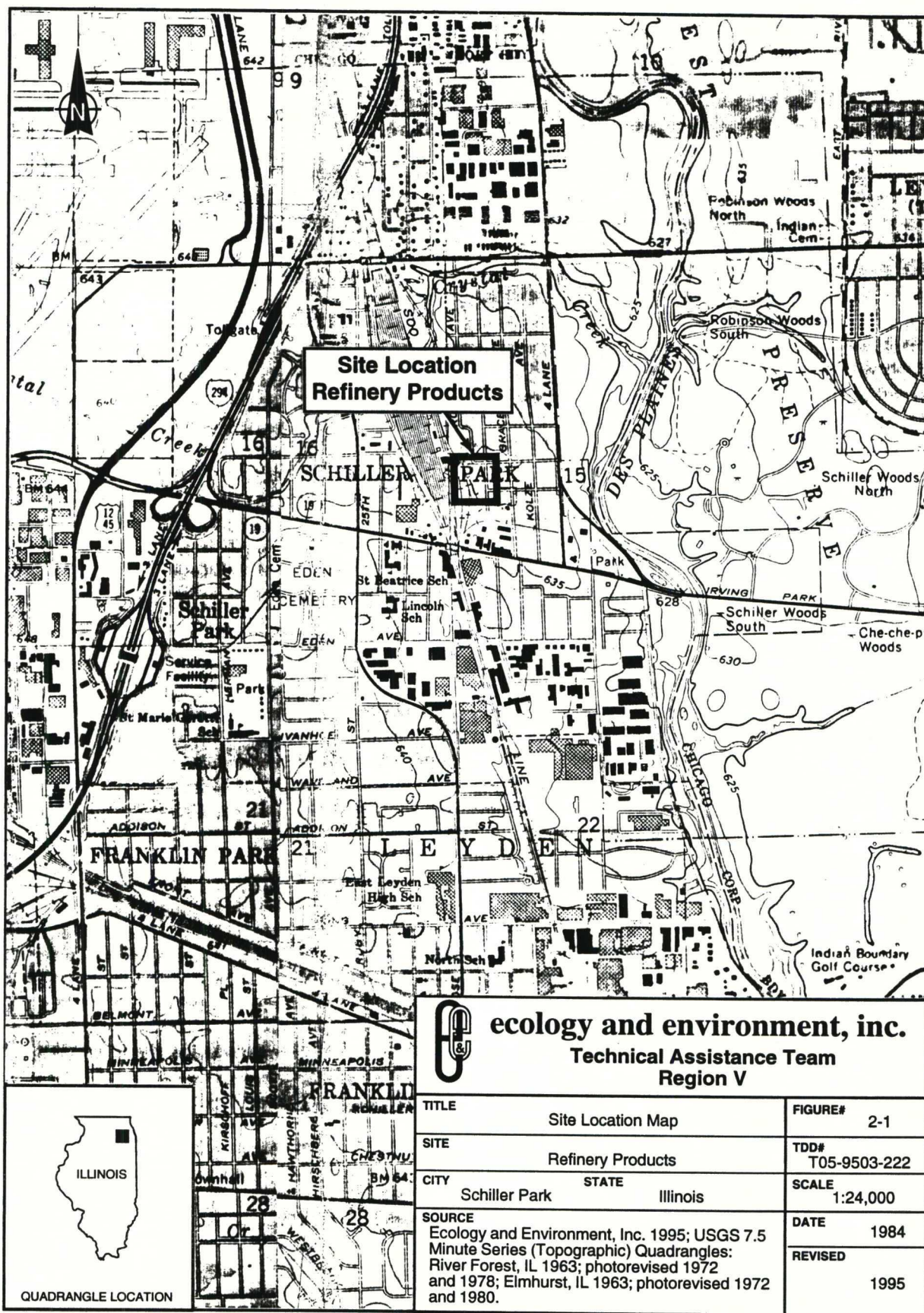
1984b; 1985). Previous inspections and manifest data indicate that these tanks had been used to store wastes such as trichloroethylene, 1,1,1-trichloroethane, methylene chloride, mineral spirits, and waste oils (IEPA 1984b). As a result of this inspection, on August 20, 1984, the IEPA requested that the IEPA Director's Office seal off the RP site (IEPA 1985a).

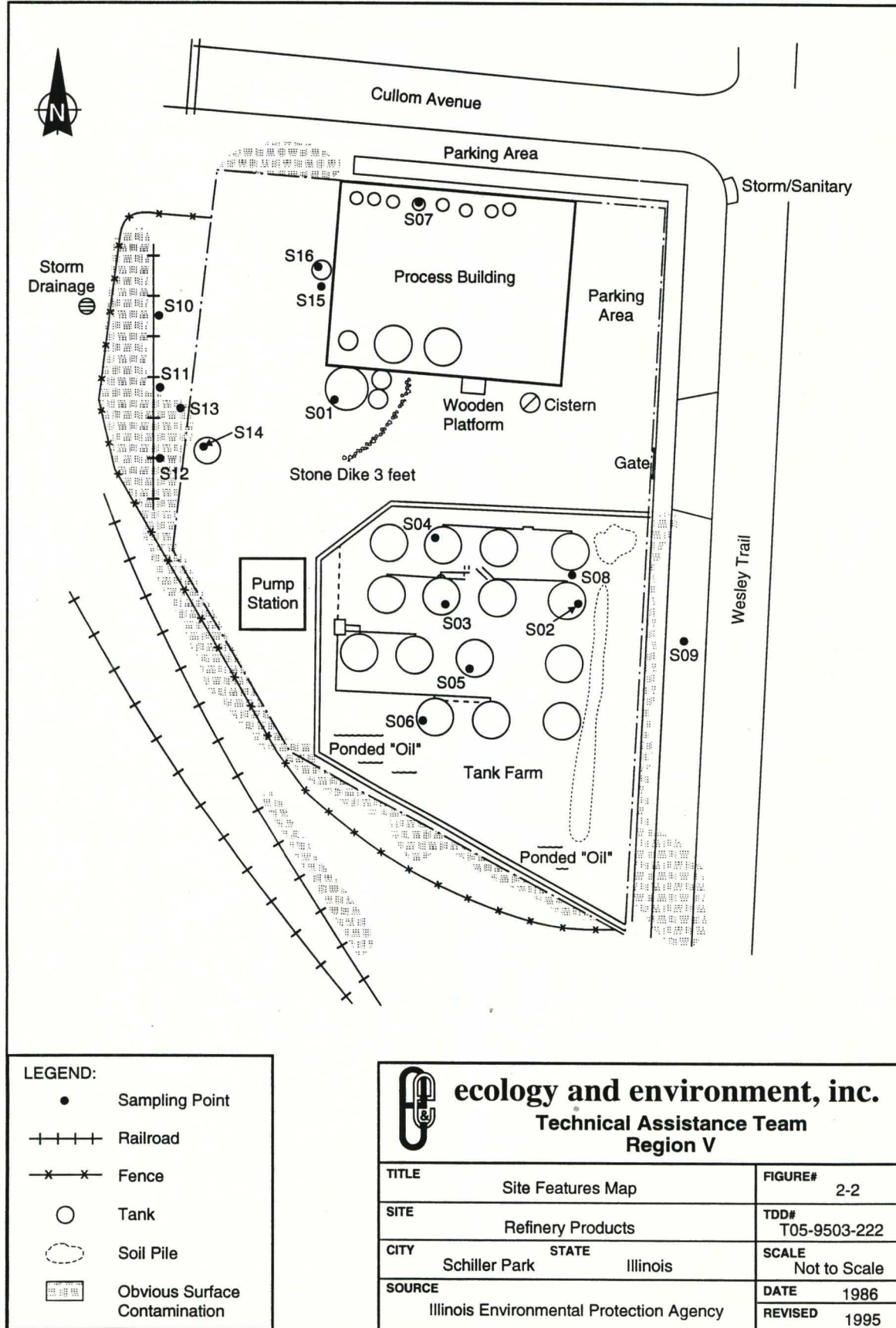
On August 22, 1984, the IEPA sealed off the RP site. The IEPA Emergency Response Unit obtained a contractor to stop the off-site migration of waste, secure the site to prevent unauthorized entry, and pump out waste accumulated in the containment area (IEPA 1985; 1985a). During the emergency cleanup, a clay seal was placed along the eastern edge of the tank farm area, liquids were pumped down from within the tank farm containment area, and contaminated sections of the sidewalk on Wesley Terrace were removed (E & E 1991; IEPA 1992).

However, an extensive cleanup project remained. Potentially hazardous conditions which remained following the initial emergency response by IEPA included the following:

- Numerous drums of varying size, many containing unknown material, remained in the yard of the facility; some drums were leaking, all were rusting and many were not sealed;
- Oil and water had accumulated in the tank farm containment area, which was suspected to be contaminated with solvents;
- The entire site area was oil soaked, and soil along the west boundary, including the Soo Line Railroad Right-of-Way west of the facility, was contaminated with oil waste containing 65 parts per million (ppm) of polychlorinated biphenyls (PCBs);
- A 1,600-gallon tank truck containing an unknown volume of liquid emitting a strong solvent odor was abandoned on-site;
- There were approximately 37 aboveground storage tanks located on the property in the yard and in the process building contained an unknown amount of waste, and one underground gasoline storage tank;
- The interior of the process building was oil soaked, had open drums containing oil and solvents stored inside, and was alleged to have a "box car size" buried tank containing hazardous waste; and
- Alleged drums of trichloroethane or trichloroethylene were buried on site in an area directly west of the process building (IEPA 1985).

1981 (IEPA 1984a). The most recent IEPA RCRA inspection on file is dated April 30, 1990, and states in the attached narrative that the site is essentially an unoccupied vacant lot following Remedial Project Management Section (RPMS) cleanup activities, the site had interim status, but had not gone through closure. Though much of the site had been cleaned up under the supervision of RPMS, this may or may not have sufficed as adequate closure. Free product was observed when marking borings for the groundwater monitoring wells, and the RPMS planned to investigate the need for additional site cleanup. If the cleanup activities pursued by RPMS were determined to substitute closure, the site would no longer be subject to RCRA regulations (IEPA 1990).





3. PREVIOUS INVESTIGATIONS

Initial discovery of the RP site is not known. Apparently, the site had been an operating facility since approximately 1935 (IEPA 1984a; 1980). Historical information on the site prior to 1980 is not known. The November 1980 IEPA application for permit to develop a solid waste management site filed by the site representatives contains a State of Illinois license from the Village of Schiller Park, Illinois, dated May 1, 1975, granting Refinery Products to operate an oil renovating and recycling facility (IEPA 1980).

On May 23, 1980, IEPA inspected the RP site, and interviewed Mr. John VanHoesen. Mr. VanHoesen explained that the site was undergoing changes to convert to a storage facility. Upon completion the site would have the capacity to store approximately 200,000 gallons of petroleum-based waste accepted under a manifest system and hauled by special waste haulers (IEPA 1980a).

On December 5, 1980, IEPA conducted a pre-development inspection of the RP site and met with Mr. John Sureth and Mr. John VanHoesen, the site representatives. This inspection revealed that the concrete containment area surrounding the outside storage tanks had a persistent leaking problem in the southeast corner, the piping system throughout the facility had a leaking problem in which it was noted by IEPA that buckets were being used to catch waste oils, and the site had areas of oil and water standing in pools in the yard and inside the building. The Schiller Park Fire Department (SPFD) had issued a notice to Refinery Products to correct the oil leakage problems. According to the Schiller Park Fire Chief Swierczynski, the SPFD fire department had taken Refinery Products to court over this problem. The RP site was found to be in non-compliance with RCRA rules and regulations by IEPA (IEPA 1980b).

Refinery Products submitted an application for permit to develop a solid waste management site to the IEPA in November 1980 (IEPA 1980). Refinery Products received a development permit from the IEPA on July 2, 1981, and an operating permit on October 29,

1981 (IEPA 1984a). Primary operations at the RP site involved the reprocessing of waste oils, and the storage and filtering of waste solvents (IEPA 1984a). The operating permit received in October 1981 from IEPA allowed for the operation of a facility for treatment of waste oils and for storage of waste solvents (IEPA 1984).

On May 19, 1982, the RP site was found by IEPA to be in violation of permit conditions; drums were being left full of liquids instead of being pumped out upon arrival at the facility (IEPA 1992).

On June 18, 1982, additional permit violations were documented by IEPA; drums were leaking, and liquids were leaching through the concrete containment area outside onto the sidewalk, and contaminated run off was noted to be migrating west and contaminating the adjacent off-site railroad property (IEPA 1992).

In 1982, an incident occurred in which still bottoms from the RP site operations were being disposed of in a Browning-Ferris Industries garbage container (Pfister 1982).

On December 29, 1982, additional violations are noted during an IEPA inspection, and oily waste was observed to cover the entire site and was leaking off site (IEPA 1992).

A U.S. EPA inspection of the RP site on June 30, 1983 documented PCB contamination (IEPA 1992).

On April 12, 1983, IEPA and U.S. EPA conducted a PCB compliance inspection to determine if PCB contamination was occurring on site and off site from the RP site as a result of site operations. Samples were collected from numerous tanks on site, railroad tank cars on site, inside and outside of the concrete containment area, from sediments along the west side of the property, and sediment from a tank bottom located on the west side of the process building. PCB sample analysis from this investigation revealed Aroclor 1248 at 280 milligrams per kilogram (mg/kg) in oil sample number 83TS38S11 (S11) collected from one of the on site railroad tank cars, Aroclor 1254 at 76 mg/kg in sediment sample number 83TS38S13 (S13) collected from the west side of the site property, located west of the site fence and adjacent to the on-site railroad tank cars, and Aroclor 1254 at 110 mg/kg in sediment sample number 83TS38S14 (S14) collected from the west side of the property near an open tank lying on its side along the on-site railroad tank car area (U.S. EPA 1983). Sample locations from this 1983 PCB sampling are shown on Figure 2-2. Available information from the 1983 U.S. EPA PCB Compliance Report and analytical data is provided in Appendix A.

Operations at the facility ceased in July 1, 1984, when the parent company, QueVoe, filed for bankruptcy (IEPA 1985).

An IEPA memorandum dated August 27, 1984, describes the RP site as having had most of the oil storage and treatment occurring in 15 aboveground tanks within a containment area south of the office and process building. In 1984, there were approximately 7 tanks outside of this containment area on the site property, and approximately 15 tanks and 95 drums containing waste material inside the processing building. An oily material was observed oozing from the outside tank farm containment area onto the sidewalk, and also onto the adjacent railroad property west of the site (IEPA 1984).

On July 25, 1984, IEPA noted the following conditions during an on-site inspection:

- The tank farm that bordered Wesley Terrace on the west contained 15 above ground tanks surrounded by a 6 feet high and 8 feet wide concrete dike. Waste material had accumulated on the ground inside this containment area to a depth of approximately 8 inches to 12 inches. This material had leached through the concrete dike onto the public sidewalk bordering Wesley Terrace. Previous inspections and manifest data indicated that these tanks had been used to store hazardous wastes such as trichloroethylene, 1,1,1-trichloroethane, methylene chloride, mineral spirits, and waste oils. Visible contamination was observed to have occurred off site onto the sidewalk. Residences are located across the street from the facility on Wesley Terrace (IEPA 1984b).
- The RP site was enclosed by a chain-link fence and the outside concrete containment dike. However, it was noted that there were two places where access to the site was not restricted; one was on the east side of the site along Wesley Terrace where there was a gap between the concrete dike and the gate post, and the other was in the southwest portion of the site where the fencing had become unattached from the concrete dike (IEPA 1984b).
- There was an underground tank in the northwest portion of the site. A 100% LEL explosimeter reading was obtained from the filler pipe leading from this tank (IEPA 1984b).
- There were two cisterns located at the east central portion of the site, and both apparently contained waste material. One of the cisterns had a cover which could easily be removed, and the other cistern had no cover (IEPA 1984b).

On August 3, 1984, IEPA and U.S. EPA inspected the RP site documenting the following findings:

- A PCB-contaminated area on the Soo Line railroad track had been fenced off;
- The diked containment area containing 15 aboveground grossly stained tanks had a tar-like substance material accumulated up to approximately 9 inches in depth;
- Product was observed to be leaking out of the diked area onto the sidewalk;
- Site access was still unrestricted with damaged temporary fencing and a gap between the dike area and the gate post;
- HNU organic vapor readings were recorded on site as follows: 20 ppm in the lower cistern, 1-2 ppm in the upper cistern, 50 ppm from an underground tank, and 25 ppm from a tank truck compartment. All other readings throughout the site were recorded as background of 0.2 ppm (U.S. EPA 1984).

On August 7, 1984, a second assessment was conducted in the process building to document whether an explosion and/or fire hazard existed. No readings were recorded with the explosimeter, and ambient HNU readings inside the building ranged from 3 to 3.5 ppm. It was observed that many of the drums inside the building were without tops and contained materials. Some of the drums were completely sealed, but no bulging drums were observed. An explosimeter reading of 100% LEL was obtained from inside the inlet of an underground tank that the site owner said supplied the gas pump. The HNU reading for this tank was 40 ppm. Other HNU readings recorded were similar to previous inspections (U.S. EPA 1984).

As a result of these inspections, on August 20, 1984, the IEPA requested that the IEPA Director's Office seal off the RP site (IEPA 1985a).

On August 22, 1984, the IEPA sealed the RP site. The IEPA Emergency Response Unit obtained a contractor (Petrochem) to stop the off-site migration of waste, secure the site to prevent unauthorized entry, and pump out waste accumulated in the containment area (IEPA 1992; 1985; 1985a). During the emergency cleanup, a clay seal was placed along the eastern edge of the tank farm area, liquids were pumped down from within the tank farm containment area, and contaminated sections of the sidewalk on Wesley Terrace were removed (E & E 1991; IEPA 1992).

However, after the initial emergency cleanup, an extensive clean-up project remained. Potentially hazardous conditions remained at the RP site, as previously discussed. A three phase cleanup of the RP site was proposed by IEPA (IEPA 1985).

A Preliminary Assessment (PA) report by the IEPA was submitted for the RP site, and is dated August 27, 1984 (IEPA 1984c).

On October 2, 1984, an off-site Site Inspection (SI) was conducted by Ecology & Environment, Inc. and the SI report is dated October 2, 1984 (E & E 1984).

On July 18, 1985, IEPA inspected the RP site noting that the site gate had an extra lock placed on it, and inside the containment area a sump pump was pulling water into an aerator which was misting liquids. SPFD personnel were called to the scene to disconnect the device which had an electrical cord powering it, and was deemed a fire hazard (IEPA 1992). Apparently, the site owner had been going on site and had initiated unauthorized treatment activities. The State of Illinois Attorney General's Office was requested by IEPA to intercede and stop unauthorized activities of the site owner (IEPA 1985a).

Sampling was conducted by IEPA during the July 18, 1985, inspection. Sample number X204 was collected from the east side of the containment area next to a storage tank in the northeast corner. Chemical analysis of sample number X204 revealed the presence of total PCBs at 49 micrograms per kilogram ($\mu\text{g/g}$), aliphatic hydrocarbons at 28,000 $\mu\text{g/g}$, and other organic compounds at 2,600 $\mu\text{g/g}$. Sample number X207 was collected from the northwest corner of the containment area next to the aerator. Chemical analysis of sample number X207 revealed the presence of total PCBs at 32 $\mu\text{g/g}$, aliphatic hydrocarbons at 21,000 $\mu\text{g/g}$, and other organic compounds at 3,500 $\mu\text{g/g}$. Sample number X210 was collected from the east side of the containment area, which was a scraping collected in an area of visible soil contamination. Chemical analysis of sample number X210 revealed the presence of total PCBs at 28 $\mu\text{g/g}$, aliphatic hydrocarbons at 6,800 $\mu\text{g/g}$, and other organic compounds at 540 $\mu\text{g/g}$. Sample number X201 was collected from the east side of the containment area in the northeast corner next to the containment wall. Chemical analysis of sample number X201 revealed the presence of total PCBs at 27 $\mu\text{g/g}$, aliphatic hydrocarbons at 30,000 $\mu\text{g/g}$, and other organic compounds at 3,000 $\mu\text{g/g}$. 1985 IEPA Analytical Data is provided in Appendix A. These sample locations are not shown on any FSIP figures, however, the sample numbers are called out for clarification of this data provided in Appendix A.

An IEPA sample was collected from the RP site on July 31, 1985. Sample number X302 was collected from the west side of the RP site in the railroad spur area. Chemical analysis of sample number X302 revealed the presence of total PCBs at 0.39 $\mu\text{g/L}$, aliphatic hydrocarbons at 70 $\mu\text{g/L}$, and other organic compounds at 30 $\mu\text{g/L}$. 1985 IEPA Analytical Data is provided in Appendix A. These sample locations are not shown on any FSIP figures, however, the sample numbers are called out for clarification of this data provided in Appendix A.

Apparently, a three phase cleanup of the RP site was conducted by the IEPA from approximately July to November 1986 (IEPA 1985; Furse 1987; Lue-Hing 1987; E & E 1991; IEPA 1992). Phase I included sampling and an inventory of all hazardous waste present on site and immediate removal of waste ponded on-site by an IEPA cleanup contractor (Haztech/Mathis). Phase II involved the cleanup, removal, and disposal of identified wastes on site by a hazardous cleanup contractor (MAECORP). Phase III involved a hydrogeologic study of the site and installation of monitoring wells on site (HARZA) (IEPA 1992; 1985). This information is not available in the site files. This cleanup included the decontamination, demolition, and disposal of site structures and storage tanks, removal and disposal of on-site wastes, and removal and disposal of contaminated soils (E & E 1991; IEPA 1992).

An IEPA RI of the RP site was tasked in 1989, and was performed HARZA. This information is not available in the site files.

As of March 9, 1990, monitoring well sampling results indicated no groundwater contamination (IEPA 1992).

Available FSIP file information indicates that the facility at one time did have an IEPA RCRA Part A permit. The most recent IEPA RCRA inspection report on file is dated April 30, 1990, and states in the attached narrative that the site is essentially an unoccupied vacant lot following Remedial Project Management Section (RPMS) cleanup activities, the site had interim status, but had not gone through closure. Though much of the site had been cleaned up under the supervision of RPMS, that may or may not have sufficed as adequate closure. Free product was observed when marking borings for the groundwater monitoring wells, and the RPMS planned to investigate the need for additional clean-up. If the cleanup activities pursued by RPMS were determined to substitute closure, the site would no longer be subject to RCRA regulations (IEPA 1990).

4. MIGRATION AND EXPOSURE PATHWAYS

This section describes the four migration and exposure pathways associated with the RP site. Section 4.1 discusses the groundwater migration pathway; Section 4.2 discusses the surface water migration pathway; Section 4.3 discusses the soil exposure pathway; and Section 4.4 discusses the air migration pathway.

4.1 GROUNDWATER MIGRATION PATHWAY

This section discusses regional geology and soils, groundwater releases, and targets associated with the groundwater migration pathway at the site.

4.1.1 Geology and Soils

Illinois State Geologic Survey well logs within the area of the RP site indicate there is a Silurian-aged limestone aquifer of the Niagaran Series (ISGS, no date). Well records available indicate the shallowest depth to this limestone aquifer is 60 feet (ISGS, no date; E & E 1984). The residents of the surrounding urban communities obtain drinking water from the city of Chicago municipal water supply system, which draws drinking water from intakes in Lake Michigan (Chekuri 1984; Cozza 1984; Hix 1984; Sieracki 1984). A mid-1970s village ordinance from Schiller Park, Illinois banned the use of groundwater for drinking purposes, and only Chicago Municipal Water System drinking water is to be used (Sieracki 1984). Some residential groundwater wells may still be present in Schiller Park, however, they are not used for drinking purposes (Sieracki 1984). Through conversations by E & E FIT with water department personnel in the communities surrounding the RP site in 1984, it was possible that an extremely small number of residences could still use private wells to obtain drinking water. As the worst possible case, the number of residences would be under 10 persons, and all usres would be at least 2 to 3 miles in distance from the RP site (Hix 1984a).

4.1.2 Groundwater Releases

A release of hazardous substances to groundwater is likely, based on the past spills and operating practices of the facility previously discussed in Section 3 of this report. There have been numerous releases to surface soils over the years from the RP site, with the potential for contaminants to migrate to groundwater. File information does not indicate that the site had adequate engineered controls for the containment of wastes. As mentioned above, an IEPA RI of the RP site was tasked in 1989, and was performed by HARZA. The project included an initial RI program to provide baseline data, followed by quarterly groundwater monitoring and preparation of a Final RI report. The monitoring program encompassed four quarters, including the initial RI sampling. (IEPA 1992; E & E 1991; Fogg 1990; Ghia 1989). This sample data information is not available in the site files.

As of March 9, 1990, monitoring well sampling results indicated no groundwater contamination (IEPA 1992).

4.1.3 Targets

The residents of the surrounding urban communities obtain drinking water from the City of Chicago Municipal Water Supply System, which draws drinking water from intakes in Lake Michigan (Chekuri 1984; Cozza 1984; Hix 1984; Sieracki 1984). A mid-1970s village ordinance from Schiller Park, Illinois banned the use of groundwater for drinking purposes, and only Chicago Municipal Water System drinking water is to be used (Sieracki 1984). Some residential groundwater wells may still be present in Schiller Park, however, they are not used for drinking purposes (Sieracki 1984). Through conversations by E & E FIT with water department personnel in the communities surrounding the RP site in 1984, it was possible that an extremely small number of residences could still use private wells to obtain drinking water. As the worst possible case, the number of residences would be under 10 persons, and all users would be at least 2 to 3 miles in distance from the RP site (Hix 1984a).

4.2 SURFACE WATER MIGRATION PATHWAY

The RP site is located on approximately 1.5 acres of land in Schiller Park, Illinois (IEPA 1984). This area of Schiller Park is a well established area of heavy and light industrial, commercial, and single and multi-family residential land uses (IEPA 1980).

Surface water pathway sampling has not been conducted at the RP site during previous investigations.

The Des Plaines River and Crystal Creek, the nearest surface water bodies, at their nearest points to the site, are both located approximately 1,500 feet from the site. The Des Plaines River is approximately 1,500 feet east from the site, with a residential area located in between the river and the site, and Crystal Creek is approximately 1,500 feet north-northwest of the site, as measured along the potential overland migration path of the Soo Line Railroad adjacent to the site to the west (USGS 1963).

Apparently, there is a sanitary storm sewer located at the corner of Wesley Terrace and Cullom Avenue, near the process building of the RP site. This would be the most likely route for a release of hazardous substances to the Des Plaines River. The Schiller Park Water and Sewer Department Superintendant stated that this drain was a combination storm water/sanitary sewer, and that it flows to the City of Chicago Metropolitan Sanitary District (MSD) station located at Irving Park Road and River Road for treatment prior to discharge into the Des Plaines River. He also stated that both the MSD and the Village of Schiller Park have in the past cited violations against the RP site for discharging wastes into the sewer system (Sieracki 1984).

The Des Plaines River is widely used recreationally (E & E 1984). The distance to the nearest surface water intakes are farther than 15 miles downstream of the RP site (E & E 1991).

4.3 SOIL EXPOSURE PATHWAY

On April 12, 1983, IEPA and U.S. EPA conducted a PCB compliance inspection to determine if PCBs contamination was occurring on site and off site from the RP site as a result of site operations. Samples were collected from numerous tanks on site, railroad tank cars on site, inside and outside of the concrete containment area, from sediments along the west side of the property, and from sediment collected from a tank bottom located on the west side of the process building. PCB sample analysis from this investigation revealed Aroclor 1248 at 280 mg/kg in oil sample number 83TS38S11 (S11) collected from one of the on-site railroad tank cars, Aroclor 1254 at 76 mg/kg in sediment sample number 83TS38S13 (S13) collected from the west side of the site property, located west of the site fence and adjacent to the on-site railroad tank cars, and Aroclor 1254 at 110 mg/kg in sediment sample number 83TS38S14 (S14) collected from the west side of the property near an open tank lying on its side along the on-site railroad tank car area (U.S. EPA 1983). Sample locations from this 1983 PCB sampling are shown on Figure 2-2.

On July 25, 1984, IEPA noted the following conditions during an on-site inspection: numerous tanks were found on the site containing wastes, with accumulated waste material inside the tank farm containment area; and site access was not restricted due to gaps occurring in the fence (IEPA 1984b).

On August 22, 1984, the IEPA sealed off the RP site. The IEPA Emergency Response Unit obtained a contractor (Petrochem) to stop the off-site migration of waste, secure the site to prevent unauthorized entry, and pump out waste accumulated in the containment area (IEPA 1992; 1985; 1985a). During the emergency clean-up, a clay seal was placed along the eastern edge of the tank farm area, liquids were pumped down from within the tank farm containment area, and contaminated sections of the sidewalk on Wesley Terrace were removed (E & E 1991; IEPA 1992).

The IEPA Record of Decision states that the entire site area was oil soaked, and soil along the west boundary, including the Soo Line Railroad Right-of-Way west of the facility, was contaminated with oil waste containing 65 ppm of PCBs (IEPA 1985).

On July 18, 1985, IEPA inspected the RP site noting that the site gate had an extra lock placed on it, and inside the containment area a sump pump was pulling water into an aerator which was misting liquids. SPFD personnel were called to the scene to disconnect the device which had an electrical cord powering it, and was deemed a fire hazard (IEPA 1992). Apparently, the site owner had been going on site and had initiated unauthorized treatment activities. The State of Illinois Attorney General's Office was requested by IEPA to intercede and stop unauthorized activities of the site owner (IEPA 1985a).

Sampling was conducted by IEPA during the July 18, 1985 inspection. Sample number X204 was collected from the east side of the containment area next to a storage tank in the northeast corner. Chemical analysis of sample number X204 revealed the presence of total PCBs at 49 $\mu\text{g/g}$, aliphatic hydrocarbons at 28,000 $\mu\text{g/g}$, and other organic compounds at 2,600 $\mu\text{g/g}$. Sample number X207 was collected from the northwest corner of the containment area next to the aerator. Chemical analysis of sample number X207 revealed the presence of total PCBs at 32 $\mu\text{g/g}$, aliphatic hydrocarbons at 21,000 $\mu\text{g/g}$, and other organic compounds at 3,500 $\mu\text{g/g}$. Sample number X210 was collected from the east side of the containment area, which was a scraping collected in an area of visible soil contamination. Chemical analysis of sample number X210 revealed the presence of total PCBs at 28 $\mu\text{g/g}$, aliphatic hydrocarbons at 6,800 $\mu\text{g/g}$, and other organic compounds at 540 $\mu\text{g/g}$. Sample number X201 was collected from the east side of the containment area in the northeast corner next to the containment wall. Chemical analysis of sample number X201 revealed the

presence of total PCBs at 27 $\mu\text{g/g}$, aliphatic hydrocarbons at 30,000 $\mu\text{g/g}$, and other organic compounds at 3,000 $\mu\text{g/g}$. 1985 IEPA Analytical Data is provided in Appendix A. These sample locations are not shown on any FSIP figures, however, the sample numbers are called out for clarification of this data provided in Appendix A.

An IEPA sample was collected from the RP site on July 31, 1985. Sample number X302 was collected from the west side of the RP site in the railroad spur area. Chemical analysis of sample number X302 revealed the presence of total PCBs at 0.39 $\mu\text{g/L}$, aliphatic hydrocarbons at 70 $\mu\text{g/L}$, and other organic compounds at 30 $\mu\text{g/L}$. 1985 IEPA Analytical Data is provided in Appendix A. These sample locations are not shown on any FSIP figures, however, the sample numbers are called out for clarification of this data provided in Appendix A.

Apparently, a three phase cleanup of the RP site was conducted by the IEPA from approximately July to November 1986 (IEPA 1985; Furse 1987; Lue-Hing 1987; E & E 1991; IEPA 1992). This information is not available in the site files. This cleanup included the decontamination, demolition, and disposal of site structures and storage tanks, removal and disposal of on-site wastes, and removal and disposal of contaminated soils (E & E 1991; IEPA 1992).

The most recent IEPA RCRA inspection on file is dated April 30, 1990, and states in the attached narrative that the site is essentially an unoccupied vacant lot following Remedial Project Management Section (RPMS) cleanup activities, the site had interim status, but had not gone through final closure. Although much of the site had been cleaned up under the supervision of RPMS, that may or may not have sufficed as adequate closure. Free product was observed when marking borings for the groundwater monitoring wells, and the RPMS planned to investigate the need for additional site cleanup. If the cleanup activities pursued by RPMS were determined to substitute closure, the site would no longer be subject to RCRA regulations (IEPA 1990).

The population within one mile (straight-line distance) of the RP site is approximately 12,214 persons (E & E 1984). The nearest residences are within 30 yards of the site (IEPA 1985). It does not appear that there are any schools or daycare centers located within 200 feet of the site (USGS 1963).

The estimated breakdown of the population within the one mile radius is as follows (E & E 1991):

<u>Distance Interval</u>	<u>Number of Residents</u>
on site:	0
0 to 1/4 mile:	2,500
1/4 to 1/2 mile:	4,200
1/2 to 1 mile:	5,514

4.4 AIR MIGRATION PATHWAY

On July 25, 1984, IEPA noted the following conditions during an on-site inspection:

- There was an underground tank in the northwest portion of the site. A 100% LEL explosimeter reading was obtained from the filler pipe leading from this tank (IEPA 1984b).

On August 3, 1984, IEPA and U.S. EPA inspected the RP site documenting the following findings:

- HNU readings were recorded on-site as follows: 20 ppm in the lower cistern, 1-2 ppm in the upper cistern, 50 ppm from an underground tank, and 25 ppm from a tank truck compartment. All other readings throughout the site were recorded as background of 0.2 ppm (U.S. EPA 1984).

On August 7, 1984, a second assessment was conducted in the building to document whether an explosion and/or fire hazard existed, as discussed in Section 3 of this report. HNU readings recorded were similar to previous inspections (U.S. EPA 1984).

The population within the 4-mile radius from the RP site is as follows (E & E 1991):

<u>Distance Interval</u>	<u>Number of Residents</u>	<u>Distance Interval</u>	<u>Number of Residents</u>
0 to 1/4 mile:	2,500	1 to 2 miles:	18,555
1/4 to 1/2 mile:	4,200	2 to 3 miles:	23,000
1/2 to 1 mile:	5,514	3 to 4 miles:	30,000

5. SUMMARY

The Refinery Products (RP) site is located at 4256 Wesley Terrace, in Schiller Park, Cook County, Illinois and was a subsidiary of QueVoe Chemical Industries, Inc. It is currently inactive as the site was vacated QueVoe's its operator, Mr. John VanHoesen, on July 1, 1984, when QueVoe filed for bankruptcy. Prior to that date, the 1.5-acre RP site was operated as a reprocessor of waste oils, chlorinated solvents, and mineral spirits. The RP site consisted of approximately 15 aboveground tanks within a containment wall, 7 additional tanks outside of the containment wall, and 15 tanks and 95 drums within the processing building (E & E 1991; IEPA 1984).

Apparently, the site had been an operating facility since approximately 1935 (IEPA 1980;1984a). Historical information on the site and the property prior to 1980 is not available.

Available file information documents IEPA inspections beginning in 1980 to apparently inspect the facility before granting a development permit (IEPA 1980a; 1980b). Refinery Products submitted an application for a permit to develop a solid waste management site to the IEPA in November 1980 (IEPA 1980). The RP site received a development permit from the IEPA on July 2, 1981, and an operating permit on October 29, 1981 (IEPA 1984a). Primary operations at the RP site involved the reprocessing of waste oils, and the storage and filtering of waste solvents (IEPA 1984a). Most of the oil storage and treatment occurred in the 15 aboveground tanks within the containment wall south of the office/process building (IEPA 1984).

The RP site was subject to many leaks and spills over the years of operation (IEPA 1980b; 1984; 1984b; U.S. EPA 1984). Further discussion of documented releases from the RP site is provided in Section 3 of this report. A July 25, 1984 IEPA inspection revealed material leaching from the tank farm area onto the Wesley Terrace sidewalk, access to the facility was not restricted, high LEL explosimeter readings were obtained from a filler pipe to an underground storage tank in the northwest portion of the site, two cisterns in the east

central portion of the site contained waste material and were not properly sealed, and ponding of waste material was occurring in the containment area at a depth of approximately 8 inches to 12 inches (IEPA 1984b; 1985). Previous inspections and manifest data indicate that these tanks had been used to store wastes such as trichloroethylene, 1,1,1-trichloroethane, methylene chloride, mineral spirits, and waste oils (IEPA 1984b). As a result of this inspection, on August 20, 1984 the IEPA requested that the IEPA Director's Office seal the RP site (IEPA 1985a).

On August 22, 1984, the IEPA sealed off the RP site and the IEPA Emergency Response Unit obtained a contractor to stop the off site migration of waste, secure the site to prevent unauthorized entry, and pump out waste accumulated in the containment area (IEPA 1985; 1985a). During the emergency cleanup, a clay seal was placed along the eastern edge of the tank farm area, liquids were pumped down from within the tank farm containment area, and contaminated sections of the sidewalk on Wesley Terrace were removed (E & E 1991; IEPA 1992).

However, an extensive clean-up project remained. As previously mentioned, potentially hazardous conditions remained following the initial emergency response which needed to be addressed (IEPA 1985).

Apparently, a three phase cleanup of the RP site was conducted by the IEPA from approximately July to November 1986 (IEPA 1985; Furse 1987; Lue-Hing 1987; E & E 1991; IEPA 1992). This information is not available in the site files. This cleanup included the decontamination, demolition and disposal of site structures and storage tanks, removal and disposal of on-site wastes, and removal and disposal of contaminated soils (E & E 1991; IEPA 1992).

An IEPA RI of the RP site was tasked in 1989, and was performed by HARZA. The main objective of this RI was to characterize geologic and hydrogeologic conditions at the RP site, and to determine whether groundwater quality had been impacted by past site operations. As part of the RI, five monitoring wells were installed. The project included an initial RI program to provide baseline data, followed by quarterly groundwater monitoring and preparation of a Final RI report. The monitoring program encompassed four quarters, including the initial RI sampling (IEPA 1992; E & E 1991; Fogg 1990; Ghia 1989). This information is not available in the site files.

As of March 9, 1990, monitoring well sampling results indicated no groundwater contamination (IEPA 1992).

The most recent IEPA RCRA inspection on file is dated April 30, 1990, and states in the attached narrative that the site is essentially an unoccupied vacant lot following Remedial Project Management Section (RPMS) cleanup activities, the site had interim status, but had not gone through final closure, though much of the site had been cleaned up under the supervision of RPMS. This cleanup may or may not have sufficed as adequate closure. Free product was observed when marking borings for the groundwater monitoring wells, and the RPMS planned to investigate the need for additional site cleanup. If the cleanup activities pursued by RPMS were determined to substitute closure, the site would no longer be subject to RCRA regulations (IEPA 1990).

ISGS well logs within the area of the RP site indicate there is a Silurian-aged limestone aquifer of the Niagaran Series (ISGS, no date). Well records available indicate the shallowest depth to this limestone aquifer is 60 feet (ISGS, no date; E & E 1984). The residents of the surrounding urban communities obtain drinking water from the city of Chicago municipal water supply system, which draws drinking water from intakes in Lake Michigan (Chekuri 1984; Cozza 1984; Hix 1984; Sieracki 1984). Some residential groundwater wells may still be present in Schiller Park, however, they are not used for drinking purposes (Sieracki 1984). As the worst possible case, the number of residences would be under 10 persons, and all would be at least 2 to 3 miles in distance from the RP site (Hix 1984a). A release of hazardous substances to groundwater is likely, based on the past spills and operating practices of the facility previously discussed in Section 3 of this report. There have been numerous releases to surface soils over the years from the RP site, with the potential for contaminants to migrate to groundwater. File information does not indicate that the site had adequate engineered controls for the containment of wastes.

This area of Schiller Park is a well established area of heavy and light industrial, commercial, and single and multi-family residential land uses (IEPA 1980). The Chicago-O'Hare International Airport is located approximately one mile northwest of the site, and the area surrounding Schiller Park consists of numerous urban populated communities (USGS 1963; 1963a).

Surface water sampling has not been conducted at the RP site in previous investigations.

The Des Plaines River is approximately 1,500 feet east from the site, with a residential area located in between the river and the site, and Crystal Creek is approximately 1,500 feet north-northwest of the site, as measured along the potential overland migration path of the Soo Line Railroad adjacent to the site to the west (USGS 1963).

Apparently, there is a sanitary storm sewer located at the corner of Wesley Terrace and Cullom Avenue, near the process building of the RP site. This would be the most likely route for a release of hazardous substances to the Des Plaines River. The Schiller Park Water and Sewer Department Superintendant stated that this drain was a combination storm water/sanitary sewer, and that it flows to the Metropolitan Sanitary District (MSD) station located at Irving Park Road and River Road for treatment prior to discharge into the Des Plaines River. He also stated that both the MSD and the village of Schiller Park have in the past cited violations against the RP site for discharging wastes into the sewer system (Sieracki 1984).

The Des Plaines River is widely used recreationally (E & E 1984). The distance to the nearest surface water intakes are farther than 15 miles downstream of the RP site (E & E 1991).

On April 12, 1983, IEPA and U.S. EPA conducted a PCB compliance inspection to determine if PCBs contamination was occurring on-site and off-site from the RP site as a result of site operations. Samples were collected from numerous tanks on-site, railroad tank cars on-site, inside and outside of the concrete containment area, from sediments along the west side of the property, and from sediment collected from a tank bottom located on the west side of the process building. PCB sample analysis from this investigation revealed PCB contamination in several tanks and in sediments from the site (U.S. EPA 1983).

On July 25, 1984, IEPA noted the following conditions during an on-site inspection: numerous tanks were found on the site containing wastes, with accumulated waste material inside the tank farm containment area; and site access was not restricted due to gaps occurring in the fence (IEPA 1984b).

The IEPA Record of Decision states that the entire site area was oil soaked, and soil along the west boundary, including the Soo Line Railroad Right-of-Way west of the facility, was contaminated with oil waste containing 65 ppm of PCBs (IEPA 1985).

On July 18, 1985, IEPA inspected the RP site noting that the site gate had an extra lock placed on it, and inside the containment area a sump pump was pulling water into an aerator which was misting liquids. SPFD personnel were called to the scene to disconnect the device which had an electrical cord powering it, and was deemed a fire hazard (IEPA 1992). Apparently, the site owner had been going on-site and had initiated unauthorized treatment activities. The State of Illinois Attorney General's Office was requested by IEPA to intercede and stop unauthorized activities of the site owner (IEPA 1985a).

Sampling was conducted by IEPA during the July 18, 1985 inspection. Chemical analysis of samples collected revealed PCBs as high as 49 $\mu\text{g/g}$, aliphatic hydrocarbons as high as 30,000 $\mu\text{g/g}$, and other organic compounds as high as 3,500 $\mu\text{g/g}$ (IEPA 1985b).

On July 31, 1985, an IEPA sample was collected from the RP site. Chemical analysis of the sample revealed the presence of total PCBs at 0.39 $\mu\text{g/L}$, aliphatic hydrocarbons at 70 $\mu\text{g/L}$, and other organic compounds at 30 $\mu\text{g/L}$ (IEPA 1985c).

The population within one mile (straight-line distance) of the RP site is approximately 12,214 persons (E & E 1984). The nearest residences are within 30 yards of the site (IEPA 1985). It does not appear that there are any schools or daycare centers located within 200 feet of the site (USGS 1963).

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- There was an underground tank in the northwest portion of the site. A 100% LEL explosimeter reading was obtained from the filler pipe leading from this tank (IEPA 1984b).

On August 3, 1984, IEPA and U.S. EPA inspected the RP site documenting the following findings:

- HNU readings were recorded on-site as follows: 20 ppm in the lower cistern, 1-2 ppm in the upper cistern, 50 ppm from an underground tank, and 25 ppm from a tank truck compartment. All other readings throughout the site were recorded as background of 0.2 ppm (U.S. EPA 1984).

On August 7, 1984, a second assessment was conducted in the building to document whether an explosion and/or fire hazard existed. HNU readings recorded were similar to previous inspections (U.S. EPA 1984).

The total estimated population within 4 miles of the site is 83,769 persons.

6. REFERENCES

References not included in Appendix B: documents that are currently available within U.S. EPA files; copyrighted documents that are currently available in E & E's library; maps produced by either the United States Geologic Survey or the Illinois Geologic Survey; and documents that are created by the various state agencies for public use.

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- ____, 1990, Division of Land Pollution Control, *RCRA Inspection Report, QueVoe Chemical Industries, Inc., Refinery Products Division (Refinery Products), Schiller Park, Illinois, U.S. EPA ID No.: ILD000665778.*
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- ____, 1984b, Memorandum to Del Haschemeyer, from Mary Wang, Refinery Products, Schiller Park, Illinois.
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- ____, 1980, Division of Land Pollution Control, *Application For Permit To Develop A Solid Waste Management Site*, Applicant: QueVoe Chemical Industries, Inc., Site: Refinery Products Company Division, Schiller Park, Illinois.
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APPENDIX A
ANALYTICAL RESULTS

Lynn C.

1983a

REPORT ON INSPECTION TO DETERMINE
COMPLIANCE WITH THE PCB DISPOSAL
AND MARKING REGULATIONS

REFINERY PRODUCTS DIVISION
4256 WESLEY TERRACE
SCHILLER PARK, ILLINOIS 60176

April 12, 1983

Performed by:



U.S. ENVIRONMENTAL PROTECTION AGENCY
TOXIC MATERIALS BRANCH
230 SOUTH DEARBORN STREET
CHICAGO, ILLINOIS 60604

REFERENCE 5
SITE NAME Refinery Products
SITE ID D000005186

PCB COMPLIANCE INSPECTION REPORT

I. COMPANY IDENTIFICATION

Refinery Products Division
4256 Wesley Terrance
Schiller Park, Illinois
(312)299-6500

RESPONSIBLE OFFICIAL

Mr. John E. Suerth, President

II. DATE OF INSPECTION

April 12, 1983

III. PARTICIPANTS

Company

Mr. Tom Suerth, Manager
Mr. Jerry Zechlin, Hauler

U.S. EPA, REGION V AND IEPA

Mr. Anthony Restaino, Environmental Protection Specialist (Author), 5HT-11
Ms. Patricia Polston, Environmental Scientist, 5HT-11
Mr. Robert Stone, Environmental Scientist, 5HW-13
Ms. Lynn Carvello, Illinois Environmental Protection Agency

IV. OBJECTIVES

This inspection was conducted to determine if PCBs are being distributed into commerce by Refinery Products as a result of the Company's waste oil reprocessing, and to determine its compliance with the PCB disposal and marking regulations, 40 CFR Part 761, as published in the Federal Register of May 31, 1979, as amended on August 25, 1982

V. DESCRIPTION OF COMPANY

The Refinery Products Division of QuVoe Chemical Industries, Inc., operates a waste management facility to store and process liquid special waste. The IEPA permit (1981-31-OP) allows the company to handle liquid wastes under certain conditions:

1. Operation of a facility for treatment of waste oils and for storage of waste solvents;
2. Only processing oil, hydraulic oil and engine oil shall be received for treatment;
3. Only chlorinated solvents; mineral spirits and mineral oil solvents shall be accepted for storage;
4. Total volume of waste oils and solvents received at the facility each working day shall not exceed 46,000 gallons;

REFERENCE 5
SITE NAME Refinery Products
SITE ID D 0000665 786

APPENDIX A

PCB Sample Analyses¹ - Refinery Products

<u>Sample² Number</u>	<u>Description</u>	<u>PCB, ppm</u>
83TS38S01	Oil - Receiving Tank Adjacent to Processing Bldg.	³ ND,8
83TS38S02	Oil - Tank #5	ND,8
83TS38S03	Water - Tank #7	⁴ ND,0.2
83TS38S04	Oil - Tank #3	⁵ ND,40
83TS38S05	Oil - Tank #10	ND,8
83TS38S06	Oil - Tank #15	⁶ ND,4
83TS38S07	Oil - Tank #P4 Inside Processing Bldg.	ND,4
83TS38S08	Sediment - Inside Diked Area near Tank # 5	⁷ ND,30
83TS38S09	Sediment - Outside Diked Area, SE Corner, Adjacent to Concrete Wall & Parkway Leading into Street.	⁸ ND,5
83TS38S10	Sludge - RPOX 1 Railroad Tanker Car	⁹ ND,50
83TS38S11	Oil - RPOX 2 Railroad Tanker Car	280
83TS38S12	Oil - RPOX 4 Railroad Tanker Car	¹⁰ ND,16
83TS38S13	Sediment - West Side Property Fence, Just West of Fence near RPOX 2 Railroad Tanker Car	7C
83TS38S14	Sediment - Open Tank Lying on its Side, near West Side Property Fence by RPOX 4 Railroad Tanker Car	110
83TS38S15	Sediment - Outside near the West End of Processing Bldg., Adjacent to wall	¹¹ ND,90
83TS38S16	Sediment - Tank Bottoms from the Tank on West Side of Processing Bldg.	¹² ND,10

¹ Analyses done by Argonne National Laboratory, 9700 South Case Avenue, Argonne, Illinois; under Contract to CRL

² Data Set: TOSB 3002

³ ND,8 - Not detected less than 8ppm

⁴ ND,0.2 - Not detected less than 0.2 ppm

⁵ ND,40 - Not detected less than 40 ppm

⁶ ND, 4 - Not detected less than 4 ppm

⁷ ND,30 - Not detected less than 30 ppm

⁸ ND,5 - Not detected less than 5 ppm

⁹ ND,50 - Not detected less than 50 ppm

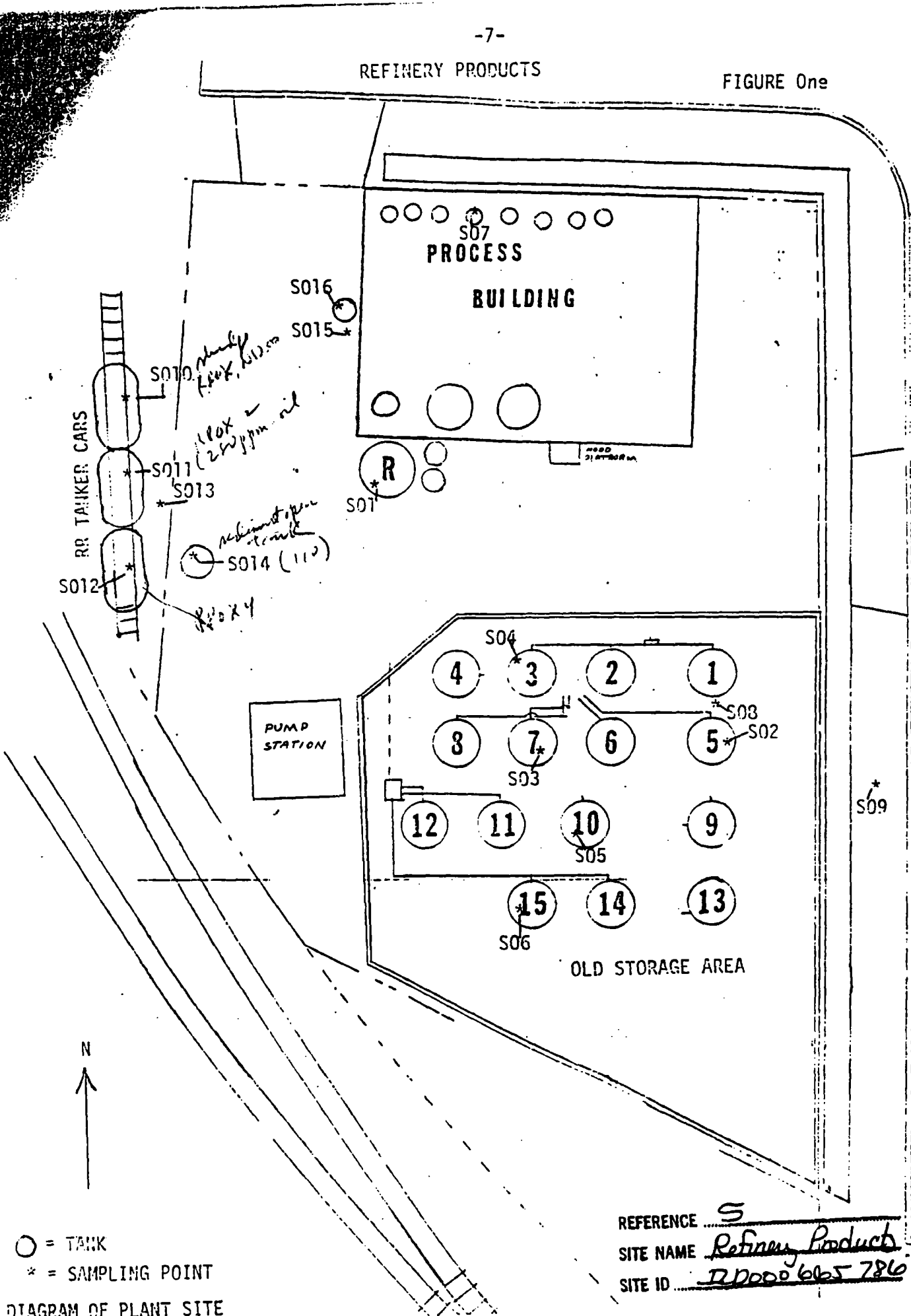
¹⁰ ND,16 - Not detected less than 16 ppm

¹¹ ND,90 - Not detected less than 90 ppm

¹² ND, 12 - Not detected less than 12 ppm

REFINERY PRODUCTS

FIGURE One



PCB Analysis
ANL Batch 35

recycled paper

Sample	1221	1016	1242	1248	1254	1260	Units
83TS38S01	<8	<4	<4	<6	<4	<2	mg/kg
" S02	<8	<4	<4	<6	<4	<2	"
" S03	<180	<40	<40	<140	<200	<100	µg/L
" S04	<40	<4	<4	<20	<20	<4	mg/kg
" S05	<8	<4	<4	<6	<4	<2	"
" S06	<4	<1	<1	<2	<1	<1	"
" S07	<4	<2	<2	<2	<2	<1	"
" S08	<30	<12	<12	<20	<12	<6	"
" S08 (Duplicate)	<30	<12	<12	<20	<12	<6	"
" S09	<5	<2	<2	<4	<2	<1	"
" S10	<50	<24	<24	<40	<20	<10	"
" S11	<8	<4	<4	280	<4	<2	"
" S12	<16	<8	<8	<10	<8	<4	"
" S13	<4	<4	<4	<4	76	<2	"
" S14	<40	<20	<20	<20	110	<10	"
" S15	<90	<40	<40	<40	<20	<10	"
" S16	<10	<10	<10	<6	<5	<2	"
" R17	<4	<2	<2	<3	<2	<1	"
" R18	<0.4	<0.2	<0.2	<0.3	<0.2	<0.1	µg/L
" R19	<0.04	<0.08	<0.08	<0.1	<0.02	<0.01	mg/kg
SRM-1	<4	<2	89.0 (89.0% Recovery)	<3	<2	<1	"

REFERENCE
SITE NAME Rehman Products
SITE ID 10000005714

BY: C.M. Isha
DATE 7-19-85

Time Collected: 5¹² PM

Lab # DO41737

Date Collected: 7-18-85

SPECIAL ANALYSIS FORM

Date Received JUL 23 1985

X204 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL
COUNTY: COOK FILE HEADING: REFINERY PROD. FILE NUMBER: 0312850002

SOURCE OF SAMPLE: (Exact Location) EAST SIDE OF DIKE
AREA NEXT TO STORAGE TANK IN
THE NE CORNER

PHYSICAL OBSERVATIONS, REMARKS: OILY - DARK BROWN
Y5 WATER

TESTS REQUESTED: TOTAL ORGANICS - SW 846 PROCEDURES
MUST BE FOLLOWED:

COLLECTED BY: R.F. TRANSPORTED BY: R.F.
LABORATORY DO41737

RECEIVED BY: JTS DATE COMPLETED: DATE FORWARDED: 8/2/85
J. Hurley

RECEIVED

AUG 05 1985

IEPA-DLPC

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SAMPLE NUMBER : D54173700 PRIORITY : . DATE EXPECTED :
 PARAMETER GROUP : LABORATORY : D
 DATE RECEIVED: 850723 TIME RECEIVED : 1000 RECEIVED BY : JTS
 FUNDING CODE : LP41 AGENCY ROUTING : 00 UNIT CODE :
 SAMPLE TYPE CODE : SAMPLE PURPOSE CODE : 0
 SITE # : REPORTING INDICATOR :
 SUBMITTING SOURCE # : SAMPLING PROGRAM :
 SAMPLING POINT DESC. : COOK REFINERY PROD. X204
 DATE COLLECTED : 850718 TIME COLLECTED : 1700
 COLLECTED BY : R.F. DELIVERED BY : MESS
 COMMENTS : TOTAL ORG. (SW 846)
 NOT USED : NOT USED :
 NOT USED : NOT USED :
 LAB OBSERVATIONS : 6OZ. DARK OIL
 SUPERVISORS INITIALS : JTH *g Hurley*

TOTAL PCB'S UG/C : 49
 TOLUENE UG/C : 150K
 XYLENES UG/C : 150K
 C3-BENZENES UG/C : 150K
 C4-BENZENES UG/C : 150K
 C5-BENZENES UG/C : 150K
 DICHLOROBENZENE UG/C : 150K
 NITROBENZENE UG/C : 150K
 HEXACHLOROBUTADIENE UG/C : 150K
 1,2,4-TRICHLOROBENZENE UG/C : 150K
 ISOPHORONE UG/C : 150K
 NAPHTHALENE UG/C : 150K
 METHYL NAPHTHALENE UG/C : 150K
 DIMETHYL NAPHTHALENE UG/C : 150K
 TRIMETHYL NAPHTHALENE UG/C : 150K
 HEXACHLOROCYCLOPENTADIENE UG/C : 150K
 ACENAPHTHYLENE UG/C : 150K
 DIBENZOFURAN UG/C : 150K
 ACENAPHTHENE UG/C : 150K
 FLUORENE UG/C : 150K
 2,4-DINITROTOLUENE UG/C : 150K
 PHENANTHRENE/ANTHRACENE UG/C : 150K
 FLUORANTHENE UG/C : 150K
 PYRENE UG/C : 150K
 BENZIDINE UG/C : 150K
 CHRYSENE UG/C : 150K
 BENZO(A)ANTHRACENE UG/C : 150K
 3,3'-DICHLOROBENZIDINE UG/C : 150K
 ALIPHATIC HYDROCARBONS UG/C : 28000
 029 : PHTHALATES UG/C : 1000
 030 : OTHER ORGANIC COMPOUNDS UG/C : 2600
 VINYL CHLORIDE UG/C : -
 CHLOROETHANE UG/C : -
 METHYLENE CHLORIDE UG/C : 20K
 BROMOCHLOROMETHANE UG/C : 20K
 1,1-DICHLOROETHYLENE UG/C : 20K
 1,1-DICHLOROETHANE UG/C : 20K
 1,2-DICHLOROETHYLENE UG/C : 20K
 CHLOROFORM UG/C : 20K
 1,2-DICHLOROETHANE UG/C : 20K
 1,1,1-TRICHLOROETHANE UG/C : 20K
 CARBON TETRACHLORIDE UG/C : 20K
 BROMODICHLOROMETHANE UG/C : 20K

Di-n-butyl phthalate

RECEIVED

AUG 05 1985

IEPA-DLPC

SAMPLE NUMBER : D54173700

1,2-DICHLOROPROPANE	UG/G : 20J
TRICHLOROETHYLENE	UG/G : 20K
BENZENE	UG/G : 20K
DIBROMOCHLOROMETHANE	UG/G : 20K
BROMOFORM	UG/G : 20K
TETRACHLOROETHYLENE	UG/G : 20K
TOLUENE	UG/G : 20K
CHLOROBENZENE	UG/G : 20K
ETHYL BENZENE	UG/G : 20K
XYLENES	UG/G : 20K

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AUG 05 1985

IEPA-DLPC

TEST NAME
BY: JTS
DATE: 7.19.85

Time Collected: 5:15 PM

Lab # D041738

Date Collected: 7-18-85

SPECIAL ANALYSIS FORM

Date Received JUL 27 1985

X 207
COUNTY: COOK
FILE HEADING: REFINERY PROD.
FILE NUMBER: 0312850002

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

SOURCE OF SAMPLE: (Exact Location) NW CORNER OF DIKE
AREA NEXT TO AERATOR.

PHYSICAL OBSERVATIONS, REMARKS: BROWN COLOR 5090 WATER,
5090 OIL.

TESTS REQUESTED: TOTAL ORGANICS - SW 846 PROCEDURES
MUST BE FOLLOWED:

COLLECTED BY: RF TRANSPORTED BY: RF
LABORATORY D041738

RECEIVED BY: JTS DATE COMPLETED: 8/2/8
FORWARDED: J. Hume

RECEIVED

AUG 05 1985

IEPA-DLPC

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SAMPLE NUMBER : D54173800 PRIORITY : DATE EXPECTED :
PARAMETER GROUP : LABORATORY : D
DATE RECEIVED: 850723 TIME RECEIVED : 1000 RECEIVED BY : JTS
FUNDING CODE : LP41 AGENCY ROUTING : 00 UNIT CODE :
SAMPLE TYPE CODE : SAMPLE PURPOSE CODE : 0
SITE # : REPORTING INDICATOR :
SUBMITTING SOURCE # : SAMPLING PROGRAM :
SAMPLING POINT DESC. : COOK REFINERY PROD. X207
DATE COLLECTED : 850718 TIME COLLECTED : 1700
COLLECTED BY : R.F. DELIVERED BY : MESS
COMMENTS : TOTAL ORC. (SW 846)
NOT USED : NOT USED :
NOT USED : NOT USED :
LAB OBSERVATIONS : 60Z. DARK OIL
SUPERVISORS INITIALS : JTH *J. H. H. H.*

TOTAL PCB'S UG/G : 32
TOLUENE UG/G : 150K
XYLENES UG/G : 150K
C3-BENZENES UG/G : 150K
C4-BENZENES UG/G : 150K
C5-BENZENES UG/G : 150K
DICHLOROBENZENE UG/G : 150K
NITROBENZENE UG/G : 150K
HEXACHLOROBUTADIENE UG/G : 150K
1,2,4-TRICHLOROBENZENE UG/G : 150K
ISOPHORONE UG/G : 150K
NAPHTHALENE UG/G : 150K
METHYL NAPHTHALENE UG/G : 150K
DIMETHYL NAPHTHALENE UG/G : 150K
TRIMETHYL NAPHTHALENE UG/G : 150K
HEXACHLOROCYCLOPENTADIENE UG/G : 150K
ACENAPHTHYLENE UG/G : 150K
DIBENZOFURAN UG/G : 150K
ACENAPHTHENE UG/G : 150K
FLUORENE UG/G : 150K
2,4-DINITROTOLUENE UG/G : 150K
PHENANTHRENE/ANTHRACENE UG/G : 150K
FLUORANTHENE UG/G : 150K
PYRENE UG/G : 150K
BENZIDINE UG/G : 150K
CHRYSENE UG/G : 150K
BENZO(A)ANTHRACENE UG/G : 150K
3,3'-DICHLOROBENZIDINE UG/G : 150K
ALIPHATIC HYDROCARBONS UG/G : 21000
029 : PHTHALATES UG/G : 1500
030 : OTHER ORGANIC COMPOUNDS UG/G : 3500
VINYL CHLORIDE UG/G : -
CHLOROETHANE UG/G : -
METHYLENE CHLORIDE UG/G : 20K
BROMOCHLOROMETHANE UG/G : 20K
1,1-DICHLOROETHYLENE UG/G : 20K
1,1-DICHLOROETHANE UG/G : 20K
1,2-DICHLOROETHYLENE UG/G : 20K
CHLOROFORM UG/G : 20K
1,2-DICHLOROETHANE UG/G : 20K
1,1,1-TRICHLOROETHANE UG/G : 20K
CARBON TETRACHLORIDE UG/G : 20K
BROMODICHLOROMETHANE UG/G : 20K

Di-n-butyl phthalate

RECEIVED

AUG 05 1985

IEPA-DLPC

SAMPLE NUMBER : D54173800

1,2-DICHLOROPROPANE	UG/G : 20K
TRICHLOROETHYLENE	UG/G : 20K
BENZENE	UG/G : 20K
DIBROMOCHLOROMETHANE	UG/G : 20K
BROMOFORM	UG/G : 20K
TETRACHLOROETHYLENE	UG/G : 20K
TOLUENE	UG/G : 20K
CHLOROBENZENE	UG/G : 20K
ETHYL BENZENE	UG/G : 20K
XYLENES	UG/G : 20K

BY: 01. [signature]
DATE: 7-19-85

Time Collected: 5²⁰ PM

Lab # DC42739

Date Collected: 7-18-85

SPECIAL ANALYSIS FORM

Date Received JUL 23 1985

X210
COUNTY: COCK FILE HEADING: REFINERY PROD. FILE NUMBER: 0312850002
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

SOURCE OF SAMPLE: (Exact Location) ALONG EAST SIDE OF
DIKE, SCRAPING OFF DIKE AREA

PHYSICAL OBSERVATIONS, REMARKS: SOIL SATURATED WITH OIL
AND SOLVENTS.

TESTS REQUESTED: TOTAL ORGANICS - SW 846 PROCEDURES
MUST BE FOLLOWED.

COLLECTED BY: BB TRANSPORTED BY: RF
LABORATORY DC42739

RECEIVED BY: JTS DATE COMPLETED: DATE FORWARDED: 8/2/85
J. Hurley

RECEIVED

AUG 05 1985

IEPA-DLPC

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SAMPLE NUMBER : D54173900 PRIORITY : DATE EXPECTED :
PARAMETER GROUP : LABORATORY : D
DATE RECEIVED: 850723 TIME RECEIVED : 1000 RECEIVED BY : JTS
FUNDING CODE : LP41 AGENCY ROUTING : 00 UNIT CODE :
SAMPLE TYPE CODE : SAMPLE PURPOSE CODE : 0
SITE # : REPORTING INDICATOR :
SUBMITTING SOURCE # : SAMPLING PROGRAM :
SAMPLING POINT DESC. : COOK REFINERY PROD. X210
DATE COLLECTED : 850718 TIME COLLECTED : 1700
COLLECTED BY : B.B. DELIVERED BY : MESS
COMMENTS : TOTAL ORG. (SW 846)
NOT USED : NOT USED :
NOT USED : NOT USED :
LAB OBSERVATIONS : 60Z. DARK OIL
SUPERVISORS INITIALS : JTH *J. Huey*

TOTAL PCB'S UG/G : 28
TOLUENE UG/G : 150K
XYLENES UG/G : 150K
C3-BENZENES UG/G : 150K
C4-BENZENES UG/G : 150K
C5-BENZENES UG/G : 150K
DICHLOROBENZENE UG/G : 150K
NITROBENZENE UG/G : 150K
HEXACHLOROBUTADIENE UG/G : 150K
1,2,4-TRICHLOROBENZENE UG/G : 150K
ISOPHORONE UG/G : 150K
NAPHTHALENE UG/G : 150K
METHYL NAPHTHALENE UG/G : 150K
DIMETHYL NAPHTHALENE UG/G : 150K
TRIMETHYL NAPHTHALENE UG/G : 150K
HEXACHLOROCYCLOPENTADIENE UG/G : 150K
ACENAPHTHYLENE UG/G : 150K
DIBENZOFURAN UG/G : 150K
ACENAPHTHENE UG/G : 150K
FLUORENE UG/G : 150K
2,4-DINITROTOLUENE UG/G : 150K
PHENANTHRENE/ANTHRACENE UG/G : 150K
FLUCRANTHENE UG/G : 150K
PYRENE UG/G : 150K
BENZIDINE UG/G : 150K
CHRYSENE UG/G : 150K
BENZO(A)ANTHRACENE UG/G : 150K
3,3'-DICHLOROBENZIDINE UG/G : 150K
ALIPHATIC HYDROCARBONS UG/G : 5300
029 : OTHER ORGANIC COMPOUNDS UG/G : 540
VINYL CHLORIDE UG/G : -
CHLOROETHANE UG/G : -
METHYLENE CHLORIDE UG/G : 20K
BROMOCHLOROMETHANE UG/G : 20K
1,1-DICHLOROETHYLENE UG/G : 20K
1,1-DICHLOROETHANE UG/G : 20K
1,2-DICHLOROETHYLENE UG/G : 20K
CHLOROFORM UG/G : 20K
1,2-DICHLOROETHANE UG/G : 20K
1,1,1-TRICHLOROETHANE UG/G : 20K
CARBON TETRACHLORIDE UG/G : 20K
BROMODICHLOROMETHANE UG/G : 20K
1,2-DICHLOROPROPANE UG/G : 20K

RECEIVED

AUG 05 1985

IEPA-DLPC

SAMPLE NUMBER : D54173900

TRICHLOROETHYLENE	UG/G : 20K
BENZENE	UG/G : 20K
DIBROMOCHLOROMETHANE	UG/G : 20K
BROMOFORM	UG/G : 20K
TETRACHLOROETHYLENE	UG/G : 20K
TOLUENE	UG/G : 20K
CHLOROBENZENE	UG/G : 20K
ETHYL BENZENE	UG/G : 20K
XYLENES	UG/G : 20K

RECEIVED

AUG 05 1985

IEPA-DLPC

REC'D
BY: Indo
DATE 7/19/85

SCHILLER PARK REF

Time Collected: 5.20 P

Lab # DC42736

Date Collected: 7-18-85

SPECIAL ANALYSIS FORM

Date Received JUL 23 1985

X201

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:

COOK

FILE HEADING:

REFINERY PROD

FILE NUMBER:

031285000

SOURCE OF SAMPLE: (Exact Location)

EAST SIDE OF

DICE AREA IN THE NE CORNER

NEXT TO WALL.

PHYSICAL OBSERVATIONS, REMARKS:

OILY - DARK BROWN SMALL

TRACE OF WATER

TESTS REQUESTED:

TOTAL ORGANICS - SW 846 PROCEDURES

MUST BE FOLLOWED.

COLLECTED BY:

RF

TRANSPORTED BY:

RF

LABORATORY

DC42736

RECEIVED BY:

JTS

DATE
COMPLETED:

DATE
FORWARDED: 8/2/85

J. Hiney

RECEIVED

AUG 05 1985

IEPA-DLPC

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SAMPLE NUMBER : D54173600 PRIORITY : DATE EXPECTED :
PARAMETER GROUP : LABORATORY : D
DATE RECEIVED:850723 TIME RECEIVED : 1000 RECEIVED BY : JTS
FUNDING CODE : LP41 AGENCY ROUTING : 00 UNIT CODE :
SAMPLE TYPE CODE : SAMPLE PURPOSE CODE : 0
SITE # : REPORTING INDICATOR :
SUBMITTING SOURCE # : SAMPLING PROGRAM :
SAMPLING POINT DESC. : COOK REFINERY PROD. X201
DATE COLLECTED : 850718 TIME COLLECTED : 1700
COLLECTED BY : R.F. DELIVERED BY : MESS
COMMENTS : TOTAL ORG. (SW 846)
NOT USED : NOT USED :
NOT USED : NOT USED :
LAB OBSERVATIONS : 60Z.DARK OIL
SUPERVISORS INITIALS : JTH *J. H. Hensley*
TOTAL PCB'S UG/G : 27

TOLUENE	UG/G : 150K
XYLENES	UG/G : 150K
C3-BENZENES	UG/G : 150K
C4-BENZENES	UG/G : 150K
C5-BENZENES	UG/G : 150K
DICHLOROBENZENE	UG/G : 150K
NITROBENZENE	UG/G : 150K
HEXACHLOROBUTADIENE	UG/G : 150K
1,2,4-TRICHLOROBENZENE	UG/G : 150K
ISOPHORONE	UG/G : 150K
NAPHTHALENE	UG/G : 150K
METHYL NAPHTHALENE	UG/G : 150K
DIMETHYL NAPHTHALENE	UG/G : 150K
TRIMETHYL NAPHTHALENE	UG/G : 150K
HEXACHLOROCYCLOPENTADIENE	UG/G : 150K
ACENAPHTHYLENE	UG/G : 150K
DIBENZOFURAN	UG/G : 150K
ACENAPHTHENE	UG/G : 150K
FLUORENE	UG/G : 150K
2,4-DINITROTOLUENE	UG/G : 150K
PHENANTHRENE/ANTHRACENE	UG/G : 150K
FLUORANTHENE	UG/G : 150K
PYRENE	UG/G : 150K
BENZIDINE	UG/G : 150K
CHRYSENE	UG/G : 150K
BENZO(A)ANTHRACENE	UG/G : 150K
3,3'-DICHLOROBENZIDINE	UG/G : 150K
ALIPHATIC HYDROCARBONS	UG/G : 30000

029 : PHTHALATES UG/G : 1200
030 : OTHER ORGANIC COMPOUNDS UG/G : 3000

VINYL CHLORIDE	UG/G : -
CHLOROETHANE	UG/G : -
METHYLENE CHLORIDE	UG/G : 20K
BROMOCHLOROMETHANE	UG/G : 20K
1,1-DICHLOROETHYLENE	UG/G : 20K
1,1-DICHLOROETHANE	UG/G : 20K
1,2-DICHLOROETHYLENE	UG/G : 20K
CHLOROFORM	UG/G : 20K
1,2-DICHLOROETHANE	UG/G : 20K
1,1,1-TRICHLOROETHANE	UG/G : 20K
CARBON TETRACHLORIDE	UG/G : 20K
BROMODICHLOROMETHANE	UG/G : 20K

Di-n-butyl phthalate

RECEIVED

AUG 05 1985

IEPA-DLPC

SAMPLE NUMBER : D54173600

1,2-DICHLOROPROPANE	UG/G : 20K
TRICHLOROETHYLENE	UG/G : 20K
BENZENE	UG/G : 20K
DIBROMOCHLOROMETHANE	UG/G : 20K
BROMOFORM	UG/G : 20K
TETRACHLOROETHYLENE	UG/G : 20K
TOLUENE	UG/G : 20K
CHLOROBENZENE	UG/G : 20K
ETHYL BENZENE	UG/G : 20K
XYLENES	UG/G : 20K

023 : 20K = LESS THAN 20 UG/G (PPM) DETECTED.

RECEIVED

AUG 05 1985

IEPA-DLPC

Time Collected: 11:52 A

Lab #

DC42024

Date Collected: 7-31-85

SPECIAL ANALYSIS FORM

Date Received AUG 7 1985

X302

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:

COOK

FILE HEADING:

REFINERY PROD.

FILE NUMBER:

0312850002

SOURCE OF SAMPLE: (Exact Location) WEST SIDE OF FACILITY
IN RAILROAD SPUR AREA

PHYSICAL OBSERVATIONS, REMARKS: WATERY LIQUID WITH TRACES
OF OILS.

TESTS REQUESTED: PCB - ORGANICS / HALOGENATED SOLVENTS
SW 846 PROCEDURES MUST BE FOLLOWED

COLLECTED BY: RF/GB

TRANSPORTED BY: RF

LABORATORY

RECEIVED BY: J. J. J.

DATE
COMPLETED:

DATE
FORWARDED: 11/12/85
J. J. J.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SAMPLE NUMBER : D542024

SAMPLING POINT DESC. : SCHILLER PARK (X302)

SUBMITTING SOURCE # :

DATE COLLECTED : 850731

TIME COLLECTED : 1152

SITE # :

SAMPLING PROGRAM :

COLLECTED BY : RF/GB

DELIVERED BY : MESS

COMMENTS : PCBs, ORGANICS/HALOGENATED SOLVENTS, GW846

FUNDING CODE : LP41

AGENCY ROUTING : 00

UNIT CODE :

SAM TYPE CODE :

SAMPLE PURPOSE CODE : 0

DATE RECEIVED : 850807

TIME RECEIVED : 1000

RECEIVED BY : J C

LAB OBSERVATIONS : 1 QT. WATER

REPORTING INDICATOR :

SUPERVISORS INITIALS : JTH

NOTE :

K = less than

P34536 1,2-DICHLOROBENZENE	UG/L : 5.0K
P34273 BIS-(2-CHLOROETHYL)ETHER	UG/L : 5.0K
P34447 NITROBENZENE	UG/L : 5.0K
P34391 HEXACHLOROBUTADIENE	UG/L : 5.0K

P34551 1,2,4-TRICHLOROBENZENE	UG/L : 5.0K
P34408 ISOPHORONE	UG/L : 5.0K
P34695 NAPHTHALENE	UG/L : 5.0K
P81547 METHYL NAPHTHALENE	UG/L : 5.0K

P81531 DIMETHYL NAPHTHALENE	UG/L : 5.0K
P78212 TRIMETHYL NAPHTHALENE	UG/L : 5.0K
P34386 HEXACHLOROCYCLOPENTADIENE	UG/L : 5.0K
P34200 ACENAPHTHYLENE	UG/L : 5.0K

P34205 ACENAPHTHENE	UG/L : 5.0K
P81302 DIBENZOFURAN	UG/L : 5.0K
P34381 FLUORENE	UG/L : 5.0K
P34611 2,4-DINITROTOLUENE	UG/L : 5.0K

P34461 PHENANTHRENE	UG/L : 5.0K
P34220 ANTHRACENE	UG/L : 5.0K
P34376 FLUORANTHENE	UG/L : 5.0K
P34469 PYRENE	UG/L : 5.0K

P39120 BENZIDINE	UG/L : 5.0K
P34320 CHRYSENE	UG/L : 5.0K
P34526 BENZO(A)ANTHRACENE	UG/L : 5.0K
P34631 3,3'-DICHLOROBENZIDINE	UG/L : 5.0K

P34586 2-CHLOROPHENOL	UG/L : 5.0K
P34591 2-NITROPHENOL	UG/L : 5.0K
P34694 PHENOL	UG/L : 5.0K
P34606 2,4-DIMETHYLPHENOL	UG/L : 5.0K

P34601 2,4-DICHLOROPHENOL	UG/L : 5.0K
P34621 2,4,6-TRICHLOROPHENOL	UG/L : 5.0K
P34452 4-CHLORO-3-METHYLPHENOL	UG/L : 5.0K
P34616 2,4-DINITROPHENOL	UG/L : 5.0K

P34657 2-METHYL-4,6-DINITROPHENOL	UG/L : 5.0K
P34646 4-NITROPHENOL	UG/L : 5.0K

SAMPLE NUMBER : D542024

035 : TOTAL PCB'S

UG/L : 0.39

036 : THE FOLLOWING IDENTIFICATIONS ARE TENTATIVE & QUANTITATIONS APPROXIM

037 : ALIPHATIC HYDROCARBONS

UG/L : 70

038 : OTHER ORGANIC COMPOUNDS

UG/L : 30

J. Henley

APPENDIX B
REFERENCE DOCUMENTS

DRAWING NUMBER

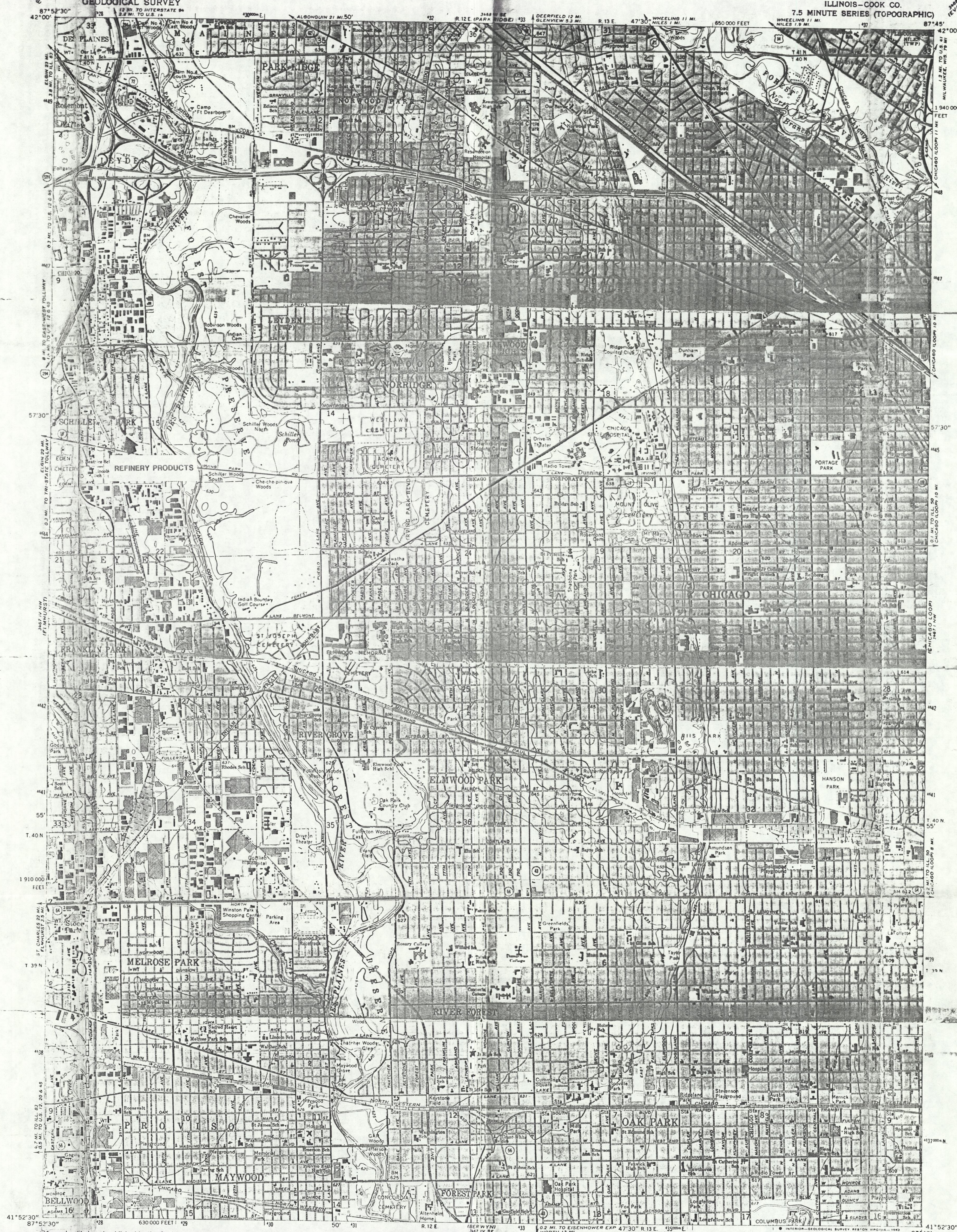
DRAWING NUMBER

DRAWING NUMBER

DRA

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REPRODUCED BYPLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REPRODUCED BYPLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REPRODUCED BY

PLAN HOLD CORP

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYRIVER FOREST QUADRANGLE
ILLINOIS-COOK CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

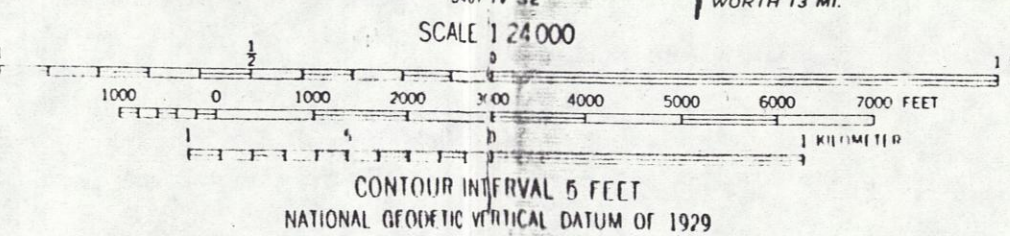
Maped, edited, and published by the Geological Survey
in cooperation with State of Illinois Geological Survey
Control by USGS, USCGS, City of Chicago, and
Cook County Highway Department
Planimetry by photogrammetric methods from aerial photographs
taken 1962-63. Topography by planimetric surveys 1974-75
1976-77.

Polyconic projection, 1927 North American datum
10,000 foot grid based on Illinois coordinate system, east zone
1000-meter Universal Transverse Mercator grid ticks,
zone 16, shown in blue.

Red tint indicates areas in which only landmark buildings are shown
Revisions shown in purple compiled from aerial photographs
taken 1972. This information not field checked
Roads not indicated as shown on map.

UTM GRID AND 1972 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

Map photorevised 1978
No major culture or drainage changes observed



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
AND BY THE STATE GEOLOGICAL SURVEY, CHAMPAIGN, ILLINOIS 61820
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

To place on the predicted North American Datum 1983
move the projection lines 2 meters north and
5 meters east as shown by dashed corner ticks

ROAD CLASSIFICATION
Heavy duty ——— Light duty ———
Medium duty ——— Unimproved dirt ———
○ Interstate Route ○ U.S. Route ○ State Route



RIVER FOREST, ILL.
N41525-18745/7.5
PHOTOGRAPHED 1978
1983
PHOTOREVISED 1977
ANS 3467 IV NE - SERIES V885